R E P O R T R E S U M E S

ED 010 418 D4

PERSONALITY FACTORS WHICH INFLUENCE CLOTHING FABRIC SELECTION BY DELINQUENT GIRLS.

BY- COMPTON, NORMA H.
UTAH STATE UNIV., LOGAN

REPORT NUMBER CRP-S-372 PUB DATE 66
REPORT NUMBER BR-5-8324
EDRS PRICE MF-$0.18 HC-$2.48 62P.

DESCRIPTORS- *PERSONALITY STUDIES, *FEMALES, *DELINQUENT IDENTIFICATION, *PERSONALITY ASSESSMENT, *CLOTHING INSTRUCTION, COMPARATIVE ANALYSIS, DELINQUENT BEHAVIOR, BEHAVIOR PATTERNS, INDIVIDUAL CHARACTERISTICS, PHYSICAL CHARACTERISTICS, LOGAN, UTAH

PHYSICAL AND PERSONALITY CHARACTERISTICS WERE EXAMINED IN RELATION TO CLOTHING CHOICES IN AN EFFORT TO MORE FULLY UNDERSTAND THE REASONS BEHIND THE PERSONAL BEHAVIORAL AND SOCIAL ADJUSTMENT PROBLEMS OF DELINQUENT GIRLS. AN EXPERIMENTAL GROUP OF 22 DELINQUENT GIRLS AND A CONTROL GROUP OF THE SAME NUMBER OF NONDELINQUENTS (MATCHED TO AGE, IQ, AND ECONOMIC AND ETHNIC BACKGROUND) WERE SET UP FOR COMPARISONS AMONG THE FOLLOWING MEASUREMENTS--(1) BODILY CONSTITUTION, (2) RORSCHACH FACTORS (BODY-IMAGE AND PERSONALITY), (3) PERCEPTUAL CHARACTERISTICS, AND (4) CLOTHING FABRIC AND DRESS STYLE PREFERENCES. COMPARATIVE DATA REVEALED THAT THE DELINQUENT GIRLS IN THIS STUDY DIFFERED FROM NONDELINQUENTS IN PHYSICAL CHARACTERISTICS (LARGER WEIGHT'HEIGHT AND BUST). IN ADDITION, THESE PHYSICAL CHARACTERISTICS APPEARED TO BE (1) RELATED TO SEVERAL PERSONALITY VARIABLES AS MEASURED BY RORSCHACH TESTS AND (2) PROJECTED IN PERFERENCES FOR CLOTHING COLOR IN FABRIC CHOICE. THE INVESTIGATORS NOTED THAT DELINQUENT GIRLS APPEARED TO PREFER WARM COLORS, WEAK CONTRASTS, AND LARGE DESIGNS IN CHOOSING THEIR CLOTHING FABRIC, AND IMMODEST AND FEMININE STYLES OF DRESS. IN CONTRAST, NONDELINQUENTS PREFERRED COOL COLORS, STRONG CONTRASTS, AND SMALL DESIGNS, AND MODEST AND MORE MASCULINE DRESS STYLES. (JH)

ED010404

PERSONALITY FACTORS WHICH INFLUENCE CLOTHING FABRIC SELECTION BY DELINQUENT GIRLS

Cooperative Research Project No. S-47

Norma E. Compton

Utah State University

PERSONALITY FACTORS WHICH INFLUENCE CLOTHING FABRIC SELECTION BY DELINQUENT GIRLS

Cooperative Research Project No. S-372

Norma H. Compton

Utah State University
Logan, Utah

1966

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

The research reported herein was supported by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education, and Welfare.

TABLE OF CONTENTS

	Page
Problem on Which Research was Focused	1
Objectives and Hypotheses	2
Related Research	4
1. Bodily Constitution	4
2. Rorschach Factors	6
3. Body-image or Body-concept	7
4. Perceptual Characteristics	10
Procedure	10
1. Sample	10
2. Data and Instrumentation	11
a. Bodily Constitution	11
b. Rorschach Factors	11
c. Body-Image Boundary	12
d. Perceptual Characteristics	12
e. Clothing Fabric Preferences and Dress Style Preferences	13
Analysis of the Data and Findings	15
1. Bodily Constitution	15
2. Rorschach Factors	18
3. Body-Image Boundary	22
4. Perceptual Characteristics	25
5. Clothing Fabric and Dress Style Preferences	26
Conclusions and Implications	30
1. Bodily Constitution	30
2. Rorschach Factors	33
3. Body-Image	36
4. Perceptual Characteristics	37
5. Clothing Fabric and Dress Style Preferences	37

Page

References..... 40

Appendix A: Scoring for Barrier and Penetration of Boundary

Appendix B: Scoring for Anxiety and Hostility

Appendix C: Completed Record of an Augmenter

LIST OF TABLES

Table | Page

1. Comparison of Mean Body Measurements of Delinquents and Non-delinquents..... 15

2. Comparison of Bodily Constitutions of Delinquent and Non-delinquent Reducers, Moderates, and Augmenters..... 17

3. Pearsonian Correlations (r) Between Body Measurements of Delinquent Girls and Selected Clothing Fabric Preferences and Rorschach Responses..... 18

4. Differences Between Means of Delinquents and Non-delinquents on Rorschach Factors..... 19

5. Intercorrelations of Selected Rorschach Factors in Responses of Delinquents and Non-delinquents..... 21

6. Significant Correlations of Form and Color Rorschach Responses with Color and Design Preferences in Clothing Fabrics for Delinquents and Non-delinquents..... 22

7. Mean Percentage Barrier and Penetration of Boundary Scores of Delinquent and Non-delinquent Girls..... 23

8. Correlations (r) Between % Barrier and % Penetration and Color Preferences and Rorschach Responses of Delinquents and Non-delinquents..... 24

9. Perceptual Characteristics in Relation to Delinquency and Non-delinquency..... 25

10. Comparison of Mean Choices of Strong Color Value Contrasts in Clothing Fabrics Between Three Perceptual Types of Non-delinquent..... 26

11. Mean Clothing Fabric and Dress Style Preferences of Delinquents and Non-delinquents..... 27

12. Intercorrelations of Fabric Preference and Dress Style Variables for Delinquents..... 28

13. Intercorrelations of Fabric Preferences and Dress Style Variables for Non-delinquents..... 29

LIST OF FIGURES

Figure — Page

1. Diagram Illustrating Relationship Between Physique, Clothing Fabric Preferences, and Rorschach Responses of Juvenile Delinquent Girls..... 34

2. Diagram Illustrating Relationship Between Body Boundary (Barrier) and Penetration of Boundary Scores, Color Preferences, and Rorschach Determinants for Delinquent and Non-delinquent Girls..... 38

3. Diagram Illustrating Significant Differences in Clothing Fabric and Dress Style Preferences Between Delinquent and Non-delinquent Girls..... 39

PROBLEM ON WHICH RESEARCH WAS FOCUSED

Clothing is more important to the individual during adolescence than at any other stage of the life cycle. For the adolescent, clothing assumes symbolic significance in terms of his concept of self and of his social role enactment.

> Sometimes directly, sometimes more subtly, a person's clothes and grooming are a projection of himself--his "real self or an idealized self which he is striving to live up to. We may suspect that a person does not accept himself wholeheartedly as he is, if he feels a need to falsify his appearance to a considerable degree (Hurlock, 1955).

Personal appearance and dress have also been found to relate to peer acceptance, participation in school activities, disciplinary problems, and academic grade point averages of students (Bunderson, 1965). Since many school administrators and teachers recognize a relationship between students' dress and appearance, scattered schools throughout the country have been establishing dress codes and regulations to eliminate inappropriate dress in the classroom.

Part of the educational program for girls at the Utah State Industrial School for delinquents includes classes in clothing construction. The girls purchase fabrics from a collection of fabric bolts available in the classroom and are given instruction in constructing garments from them. The instructor reports that the girls tend to be rebellious with respect to fabric colors, dress designs, and pattern sizes that conform to others' ideas of what is appropriate for their body proportions and personal coloring. An understanding of the reasons behind delinquent girls' behavior as related to their clothing choices may guide school personnel in helping these girls gain a more satisfactory personal and social adjustment.

OBJECTIVES AND HYPOTHESES

The primary objective of this study was to determine the relationship between certain constitutional, perceptual, and personality characteristics of delinquent girls and their clothing fabric preferences. Delinquent and non-delinquent girls were compared in order to define differences that might be significant in initiating effective educational procedures. The specific hypotheses tested were:

1. There are no significant differences between delinquent and non-delinquent girls with respect to:
   a. Bodily constitution (weight/height, hips, waist, bust)
   b. Rorschach content analysis
      (1) W % (whole inkblot responses)
      (2) F % (form responses)
      (3) % M (human movement responses)
      (4) % Σ C (color responses)
      (5) % Σ c (shading responses)
      (6) % H (human content)
      (7) % (H) (humanlike content)
      (8) Anxiety
      (9) Hostility
      (10) % Barrier (body boundary) score
      (11) % Penetration of body boundary
   c. Perceptual types:
      (1) Reducers
      (2) Moderates
      (3) Augmenters

d. Choices on the Compton Fabric Preference Test for:

(1) Tints, bright (saturated) colors or dark shades

(2) Warm versus cool colors

(3) Strong versus weak color value contrasts between design and background of fabrics

(4) Large versus small fabric designs

(5) Rough versus smooth-textured fabrics

e. Choices on a clothing style preference test:

(1) Masculine versus feminine dress styles

(2) Modest versus immodest dress styles

2. For delinquent and non-delinquent girls no significant relationships exist between bodily constitution and the Rorschach determinants studied.

3. For delinquent and non-delinquent girls no significant relationships exist between bodily constitution (weight/height, waist, hips, bust) and clothing fabric preferences.

4. For delinquent and non-delinquent girls no significant relationships exist between bodily constitution (weight/height, waist, hips, bust) and dress style preferences.

5. For delinquent and non-delinquent girls no significant relationships exist among the seven clothing fabric preference scores and Rorschach scores.

6. For delinquent and non-delinquent girls no significant differences exist among the perceptual types of reducers, moderates, and augmenters with respect to their physical characteristics, fabric preference scores, style preference scores, and Rorschach scores.

7. For delinquent and non-delinquent girls no significant relationships exist between scores on the seven variables measured on the Compton Fabric Preference Test and the two variables measured on the style preference test.

RELATED RESEARCH

1. Bodily Constitution

The research literature reveals several indications of a relationship between constitution and behavior.

Seltzer (1946) studied body disproportions and dominant personality traits of a group of Harvard men. His findings suggested that disproportions, such as stature tall for body weight, chests narrow for width of shoulders, etc., may indicate a genetic element in the determination of personality and behavior. Individuals possessing such disproportions had a greater frequency of dominant personality traits indicating lesser stability, lesser integration, greater sensitivity and complexity of the personality, and lesser capacity for making easy social adjustments.

The value of the concept of body type as a factor influencing an individual's behavior was also stressed in the Glueck study of juvenile delinquency (1950). The bodily constitution data from their study were analyzed anthropologically by Seltzer. He defined several significant differences between delinquent and non-delinquent boys:

(1) In gross bodily size the delinquents are superior to the non-delinquents, this superiority being expressed especially in the shoulders, chest, waist, and upper extremities.

(2) The delinquents evidence a lag in physical growth until about the fourteenth year, when they spurt forward to a superiority over the non-delinquents.

(3) The delinquents are relatively more homogeneous in physique.

(4) Bodily disproportions are less frequent among the delinquents than among the non-delinquents.

The Gluecks concluded for the body-constitution aspect of their study that basic differences in bodily morphology may be regarded as fundamentally related to differences in natural energy-tendencies. It was also suggested that less disharmony in physique among the delinquent group may facilitate aggressive behavior. The value of the concept of body type as a factor influencing an individual's behavior was stressed in the Glueck study.

Kagan (1966) studied body build in relation to impulsivity in children and concluded that boys in the third, fourth or fifth grades who were shorter and broader than their age mates were more likely to be impulsive than reflective. Also, impulsive boys in the third grade tended to perceive themselves as shorter than reflective boys of similar bodily proportions. Kagan predicted from his findings that the short-broad (greater chest breadth) boy is anxious over his strength and potency (e.g. his ability to defend himself and compete successfully in motor skills), but is predisposed to act in a way that denies or attentuates his anxiety. He tends to act immediately, for action has been a successful method of gaining success. The short-narrow chested boy with minimal muscle mass tends to be less successful and is therefore likely to withdraw from competition. Less dramatic and less consistent results were found for girls, in accordance with the general assumption that body size is not as salient a

characteristic for the young girl as it is for the boy. However, there was a slight tendency for the shorter girls to be reflective and the taller girls to be impulsive. Among girls, stature was the best correlate of impulsivity. For boys, the combination of stature and girth was the best predictor.

Recent work by Walker (1962) at the Gesell Clinic indicates that preschool children with mesomorphic body build tend to be more aggressive and active than children with tall-linear builds. Since it is unlikely that preschool children would have learned the set-role associations between stature and potency, this data supports the idea that biological variables may influence the association between body build and behavior.

2. Rorschach Factors

Rorschach responses of delinquents have been compared with those of non-delinquents by several investigators. Ray (1963) and Ray and Majundar (1962) found fewer W (whole) responses and lower H % (human content) among delinquent boys. Ray also found high F %, frequent shading responses, and low H % in the delinquents.

Harris (1955) found that delinquent boys were significantly superior to non-delinquents in acquiring M scores. This result was opposed to those of Endacott (1941), Schachtel (1950), and the Gluecks (1950) who found that delinquents gave a significantly lower number of M responses. Schachtel indicates that the tendency to the introversive experience types is less pronounced among delinquents. In contrast, the Nova Scotia delinquents (Harris, 1955) showed a tendency for more introversive experience. Personality-wise, Harris' results suggested that the delinquent is a better controlled individual than the average non-delinquent but he seems to lack

the judgment necessary for social maturity. The boys who become delinquents may be just those for whom the tediousness of their unrewarding lives is most overwhelming, or, as someone commented, 'They are the ones with enough imagination to think of doing something.'"

Fisher and Cleveland (1958) studied the relationship between several Rorschach factors and Barrier and Penetration scores of college students. They found a significant relationship only between Barrier scores and number of W (whole) responses and F + % (popular form response), in the direction of low barrier scorers scoring higher on F + % and lower on number of whole responses than high barrier subjects. In her study of psychotic women patients, Compton (1964) found a significant positive correlation between Barrier scores and M (human movement) responses.

3. Body-image or Body-concept

Baugh and Carpenter (1965) studied the delinquent's concept of his own body as portrayed through the Machover Draw-A-Person Test. The delinquent's concept of self proved to be incomplete or lacking in vital structures and functions. The authors concluded that at least on an unconscious level, the delinquent feels that he is the battleground for his inner conflicts and struggles.

Fisher and Cleveland (1958) proposed that a fundamental aspect of the body image relates to the manner in which individuals perceive their body boundaries. The degree to which people experience these boundaries ranges from definite and firm to indefinite and weak. It has been hypothesized that the individual's image of his body reflects his concept of self. The boundaries he visualizes for his body are believed to play an important role in helping him maintain homeostasis in the course of his

transactions with the world.

Several researchers have now found differences between delinquent and non-delinquent boys in the direction of the delinquent having poor boundaries. In a study of male adolescent narcotic addicts and their mothers, Leeds (1965) showed that delinquents had lower barriers than controls. Mothers of delinquents also had lower barrier scores than mothers of normal controls. Megargee (1965) reported that his sample of juvenile delinquent boys had significantly lower barrier scores than non-delinquent samples. Correlations between barrier scores and various indices of aggressive behavior, while not high, were in the direction that would be expected if lower barrier scores were associated with aggressiveness and impulsivity.

Seemingly contrary to these results, Fisher and Cleveland (1958) found that Harvard undergraduates with high barrier scores expressed anger outwardly while those with low barrier scores turned their anger inward. Megargee (1965) feels that this contradiction becomes understandable if the barrier (boundary) score is regarded as an index of adjustment or fitness rather than as an index of anger or aggression. Thus, it would be appropriate for a Harvard undergraduate who has been subjected to a deliberately provocative laboratory procedure to express anger outwardly in an interview where self-expression is encouraged. It would not be adaptive for a delinquent to express all of his frustrations through socially disapproved aggression. In both situations high barrier scores were associated with adaptive behavior while low barrier scores were associated with maladjusted behavior (Megargee, 1965).

Holtzman et al (1961) found normal adolescents had mean barrier scores lower than those of several other nonclinical groups (i.e., elementary

school children and college students). Barrier scores for five year olds, chronic schizophrenics and mental retardates were considerably lower. These data indicate that the barrier score may be an index of ego identity (Megargee, 1965).

Based upon preliminary studies with arthritics, Fisher and Cleveland (1958) devised a scoring system for evaluating the boundary dimension in terms of Rorschach responses. Rheumatoid arthritics revealed an emphasis on protective or boundary-like responses· i.e. turtle with a shell, knight in armor. A Penetration of Boundary score was also devised to get at sensations of boundary breakdown and fragility. These scoring techniques were used in the present study. See Appendix A for scoring technique.

Schilder (1935) and Garma (1949) have called attention to the intimate relationships between clothes and other body decoration and psychological variables of a body-image order. Clothing may be considered an extension of the self, serving as a means of reinforcing body walls or transforming the body image entirely. The present investigator tested the relationship between the body image boundary and penetration-of-boundary scores of a group of hospitalized psychotic women in relation to their clothing fabric preferences (Compton, 1964). The paired choice Clothing Fabric Preference Test used in the study was designed by the investigator. Based on its proven worth, it was also used in the present work. The significant relationships found in the completed study suggested that psychotic women with weak body boundaries tend to define or reinforce these boundaries through their clothing fabric choices. Other studies conducted by the author with college students and homemakers revealed significant relationships between clothing fabric preferences and physical and personality characteristics of subjects (Compton, 1962, 1963).

4. Perceptual Characteristics

Certain perceptual characteristics of juvenile delinquents appear to differ from those of non-delinquents. The delinquent is remarkably intolerant of monotony and restriction of activity. Opinions vary as to whether these differences are purely motivational or have, in addition, a fundamental physiological base. Petrie, McCullock and Kazdin (1962) studied young delinquents and non-delinquents with respect to the following perceptual types:

(a) Reducers, who tend subjectively to decrease size of objects.

(b) Moderates, who alter perceived size very little.

(c) Augmenters, who tend subjectively to increase perceived size.

The delinquent group contained significantly more Reducers and fewer Augmenters than the non-delinquents. Based on their results, the researchers recommended that the education of so-called reducer delinquents and pre-delinquents should recognize their need for change, movement and speed; for actual rather than "symbolic instruction" and for bright colors, music and company. In this respect they quoted Lord Byron who said: 'The great object of life is sensation--to feel we exist, even though in pain . . .'

PROCEDURE

1. Sample

The delinquent sample consisted of all the girls enrolled in clothing classes at the Utah State Industrial School for delinquents (N=22) during the 1965-66 school year. A group of girls from the Ogden High School served as controls. These girls were matched with the delinquent group with respect to age, I.Q., economic, and ethnic backgrounds. The I.Q.'s ranged from 69

to 121, with a mean of 95.35. There were nineteen Caucasians and three of Mexican derivation in each group. The ages ranged from fifteen to eighteen, with a mean of 15.89. Economic background was generally Low (on welfare), Low Average (unskilled), or Average (semi-skilled). Some difficulty was encountered in matching delinquents and non-delinquents in this respect. Six of the families of the delinquent girls were reported to be on welfare in contrast to one of the non-delinquent girls.

2. Data and Instrumentation

a. Bodily Constitution

Measurements were taken of each subject for weight, height. waist, hips, and bust. Weight/height ratios were calculated in accordance with Bayer and Bayley (1959). The metric system was used, with the following formula:

$$\frac{\text{Weight in pounds X .454 = kilos}}{\text{Height in inches X 2.54 = cm}} \text{ X } 100$$

b. Rorschach Factors

The Rorschach was administered individually and scored for blot location to which the subject responded, as well as for the usual determinants of F (form), M (human movement), Σ C (color), Σc (shading), H (human content) and (H) humanlike content. The scoring was conducted according to Klopfer's method (1954). To control for number of total responses, each of these scores was converted to percentages of total response.

Rorschach records were also scored for Anxiety and Hostility in accordance with Holtzman (1961). See Appendix B for scoring technique.

c. Body-Image Boundary (Barrier)

The Rorschach was scored for body-image boundary (barrier) and penetration of boundary in accordance with Fisher and Cleveland (1958). Dr. Fisher reviewed this aspect of the Rorschach scoring of the investigator. See Appendix A for scoring technique.

d. Perceptual Characteristics

Perceptual characteristics to permit classification of subjects as Reducers, Moderates, or Augmenters were determined for delinquents and non-delinquents by using the method of perceived size outlined by Petrie, McCulloch and Kazdin (1962). The perceptual apparatus used by Dr. Petrie was loaned by the Harvard Medical School for use in this study.

The procedure was as follows (Petrie, et al, 1962):

The subject is occupied for 45 minutes, with special care taken to insure that his hands are not used during this period. This resting period is essential to allow the wearing-off of the effect of whatever the subject may have been handling prior to testing.

The subject is then blindfolded and asked to feel with the thumb and forefinger of his right hand the width (38.1 mm.) of a test object, a standard block of smooth, unpainted wood. Then, with the thumb and forefinger of his other hand, he feels a long, tapered bar of similar unpainted wood and determines the place on the bar where it seems as wide as the test block. Movement back and forth is permitted and the position of subjective equality for perceived width is thus fixed. This measurement is made four times in succession.

The subject is then given a wider test block (63.5 mm.) to rub with his right hand finger and thumb at a constant rate for 90 seconds. He then again equates the original test block to the perceived equivalent width on the tapered bar, determining four equivalents.

Next the rubbing is repeated for 90 seconds and then for 120 seconds, and four measurements of the subjective size of the test object are made after each period of rubbing. After this total of five minutes of rubbing is completed, an empty interval is allowed to elapse, with measurements of the test object after 15 minutes.

After a minimum interval of one day, the whole procedure is repeated, but at this time, the stimulating block is <u>smaller</u> than the test block. A sample of a completed record is included as Appendix C.

If, on palpating the block after any of the periods of stimulation, a subject interpreted its size as being 15 per cent less than she had judged it previously, she was classified as a Reducer (final average -1.8 in. or more on large or small block stimulation). If she judged it as being 15 per cent larger, she was classified as an Augmenter (final average +1.8 in. or more on either block). The subject who neither reduced nor augmented to this extent was called a Moderate.

e. <u>Clothing Fabric Preferences and Dress Style Preferences</u>

The Compton Fabric Preference Test was administered individually to each subject. This instrument consists of 5 x 7 swatches, mounted in pairs, labeled A and B on numbered 8½" x 11 cards.

Five series of cards have been constructed.

The first series consists of plain colored broadcloth fabrics varying with respect to tints, shades, and highly saturated hues of red, yellow, orange, blue, green, and purple. The second consists of 15 patterned fabric pairs of strong vs. weak contrasts in the value of color between the design and the background of the fabric(figure-ground relationship). The third involves 15 choices between large and small designs. The fourth involves 15 choices between warm colors and cool colors, both among plain and patterned fabrics. The fifth consists of 15 fabric pairs varying in texture from rough to smooth.

Each fabric of a pair within a series and cards for all series are randomized before presentation to subjects for choices. Each subject is scored for each variable studied according to the number of times she chooses a fabric in each classification. This instrument has been reproduced in slide form (Compton, 1965, 1966) and tested for reliability and validity (Compton, 1966). The card and swatch form of the instrument was used in the present study.

A similar paired-choice instrument to measure dress style preferences was devised for this project by Compton and Humphris as part of the latter's thesis for the Master's degree. One series of this test consists of fifteen paired dress styles differing with respect to masculinity-femininity. The second series consists of fifteen styles differing in modesty-immodesty. The subjects are scored for each variable according to the number of times they choose the style in each classification.

ANALYSIS OF THE DATA AND FINDINGS

1. Bodily Constituion

Table 1 is a presentation of the mean values of selected body measurements for delinquent and non-delinquent girls, as well as the results of the analysis of variance (F) for these data.

Table 1

Comparison of Mean Body Measurements

of Delinquents and Non-delinquents

	Delinquents (N=22)	Non-delinquents (N=22)	F
Weight/Height	37.51	34.44	4.51 ≠
Hips	38.68 in.	37.18 in.	3.08
Waist	27.05 in.	25.77 in.	2.84
Bust	36.30 in.	34.41 in.	5.43 ≠

≠ $p < .05$

The hypothesis that there are no significant differences between delinquent and non-delinquent girls regarding bodily constitution is rejected with respect to weight/height ratios and bust measurement. Delinquent girls were found to be significantly larger than non-delinquent girls in terms of weight/height and size of bust.

These body characteristics were related to several other measures studied in this project. A comparison between delinquent and non-delinquent Reducers (who tend to reduce perceived size of objects) resulted in a significantly higher weight/height ratio for delinquents. Also, delinquent

Moderates (who alter perceived size very little) had significantly larger busts than non-delinquent Moderates. These results are summarized in Table 2.

There were no significant relationships between the selected body measurements of non-delinquent girls and any of the Rorschach factors or fabric preference variables studied. In contrast, delinquent girls' body measurements were related to several Rorschach and fabric preference variables, as summarized in Table 3.

These results show that delinquent girls with their larger weight/height ratios chose fewer strong figure-ground contrasts in clothing fabrics (and therefore significantly more weak contrasts) than delinquent girls with smaller weight/height ratios. They also chose warm colors more often than smaller girls. With respect to the content analysis of their Rorschach protocols, the girls with larger weight/height ratios had a significantly lower percentage of M (human movement) responses and a higher percentage of c (sum of shading or texture) responses than girls with smaller weight/height ratios.

Table 2

Comparison of Bodily Constitutions of Delinquent

and Non-delinquent Reducers, Moderates, and Augmenters

	Weight/Height			Hips			Waist			Bust		
	Del.	Non-del.	F	Del.	Non-del.	F	Del.	Non-del.	F	Del.	Non-del.	F
Reducers	37.72	31.93	7.15≠	38.55	37.50	.28	26.91	27.00	.003	36.32	34.62	1.02
Moderates	38.50	34.78	2.15	39.14	37.43	2.06	27.43	25.43	2.51	37.36	34.54	5.36≠
Augmenters	35.70	35.80	.0005	38.33	36.00	.85	26.67	25.75	.37	35.00	33.75	.39

≠ $p < .05$

Table 3

Pearsonion Correlations (r) Between Body Measurements of Delinquent Girls and Selected Clothing Fabric Preferences and Rorschach Responses (N = 22)

	Fabric Preferences			Rorschach Determinants	
	Strong Contrasts	Warm Colors	Large Designs	% M	% C
Weight/ Height	-.52≠	.44≠	-.40	-.46≠	.52≠
Hips	-.28	.04	-.53≠	-.40	.30
Waist	-.32	.36	-.29	-.42	.58≠
Bust	-.09	.49≠	-.44≠	-.32	.51≠

≠ $p < .05$

≠ $p < .01$

2. Rorschach Factors

Delinquents differed from non-delinquents in their percentage of responses to the whole inkblot (W%), in their percentage of responses with human content (% H), humanlike content % (H), and in the degree to which they expressed hostility in their responses. The results of the analysis of variance are shown in Table 4.

Table 4

Differences Between Means of Delinquents and Non-delinquents on Rorschach Factors

Rorschach Factor	Delinquents (N=22)	Non-delinquents (N=22)	F
W %	42.59 %	22.77 %	10.10≠
F %	55.36 %	58.36 %	.28
% M	9.86 %	7.77 %	.85
% Σ C	9.23 %	6.50 %	1.52
% c	2.18 %	2.09 %	.02
% H	12.44 %	7.02 %	5.49≠
% Hd	4.69 %	5.08 %	.05
% (H)	5.60 %	1.57 %	7.09≠
Anxiety	24.18	19.14	.74
Hostility	21.77	11.36	4.88≠

≠ $p < .05$

≠ $p < .01$

There were also significant relationships between several Rorschach factors in the responses of delinquents and non-delinquents. These relationships are summarized in Table 5. For both delinquents and non-delinquents, girls having a larger percentage of whole blot responses tended to have a smaller percentage of F (form) responses than girls responding to fewer whole blots. The negative relationship was highly significant for delinquents and approached significance for the non-delinquents. A high percentage of W responses also related to a high percentage of M (human movement) and % Σ C (sum of color) responses for delinquents, but there was no significant relationship between these variables for the non-delinquents. For the non-delinquent there was a significant correlation between W responses and anxiety scores. Such a tendency also existed for the delinquents, but the results were not significant to the .05 level of significance. A significant positive correlation was found for both delinquents and non-delinquents between anxiety and hostility. Subject with a high percentage of responses to form (F %) tended to have a low percentage of human movement responses (% M) and color responses (% Σ C). For the non-delinquent, % M responses were positively related to % H (human content) responses and to hostility.

Table 5

Intercorrelations of Selected Rorschach Factors in

Responses of Delinquents (N=22) and Non-delinquents (N=22)

	F %		% M		% Σ C		% H		Anxiety		Hostility	
	D	ND	D	ND	D	ND	D	ND	D	ND	D	ND
W %	-.76≠	-.34	.60≠	.03	.55≠	.04	.22	-.26	.18	.46≠	.39	.06
F %			-.52≠	-.51≠	-.61≠	-.31	-.06	-.28	-.10	-.23	-.41	-.25
% M					.25	-.05	.39	-.85≠	-.37	.12	-.19	.51≠
% Σ C							-.17	-.01	-.10	-.32	-.006	-.31
% H									.05	-.11	.14	.34
Anxiety											.80≠	.55≠

≠ $p < .05$

≠ $p < .01$

Significant relationships existed between Rorschach responses and choices with respect to several clothing fabric variables. These results are summarized in Table 6.

Table 6

Significant Correlations of Form and Color Rorschach Responses with Color and Design Preferences in Clothing Fabrics for Delinquents and Non-delinquents

Rorschach Factors	Saturated Colors		Strong Color Value Contrasts		Large Designs	
	D	ND	D	ND	D	ND
F % (form)	-.13	.59≠	-.03	-.51≠	-.20	-.25
% Σ C (color)	.07	-.43≠	-.08	-.31	.54≠	.14

≠ $p < .05$

≠ $p < .01$

For non-delinquents F % responses correlated significantly with preferences for saturated colors and weak color-value contrasts. No significant relationships occurred between these variables for delinquent girls. Color responses (%ΣC) correlated negatively with preferences for saturated colors for non-delinquents, but not for delinquents. For delinquents %ΣC correlated positively with preferences for large fabric designs.

3. Body-Image Boundary

There were no significant differences between delinquent and

non-delinquent girls on percentage of Barrier (Boundary) scores or on Penetration of Boundary scores, as measured through Rorschach content analysis. Table 7 presents mean Barrier and Penetration scores for the two groups of girls

Table 7

Mean Percentage Barrier and Penetration of Boundary Scores of Delinquent and Non-delinquent Girls

	Delinquents (N = 22)	Non-delinquents (N = 22)
% Barrier	21.7 %	22.7 %
% Penetration	9.1 %	5.5 %

There were significant relationships between percentage of Barrier and Percentage of Penetration of Boundary responses and several Rorschach and clothing fabric preference variables. These relationships are shown in Table 8. Delinquents with high barrier scores chose warm colors less often (and therefore chose cool colors more often) than delinquents with low barrier scores. They also were influenced less often by F (form or shape) in their responses to the Rorschach. Non-delinquents with high barrier scores showed a tendency toward lower F responses than those with low Barrier scores, but this relationship was not statistically significant at the .05 level of significance. ($p < .05 = .423$). Non-delinquents with high barrier scores were more influenced than those with low barrier scores by M (human movement) in their Rorschach responses and they had a

Table 8

Correlations (r) between % Barrier and % Penetration and Color Preferences and Rorschach Responses of Delinquents and Non-Delinquents

	Warm Colors		W %		F %		% M		% H		Anxiety		Hostility	
	Del.	N.D.	Del.	N.D.	Del.	N.D.	Del.	N.D.	Del.	N.D.	Del.	N.D.	Del.	N.D.
% Barrier	-.43≠	-.03	.36	-.08	-.59≠	-.38	.42	.54≠	-.05	.53≠	-.37	-.31	-.11	-.12
% Penetration	-.06	.04	.48≠	-.01	-.34	-.50≠	-.16	.34	.06	.17	.70≠	.16	.85≠	.33

≠ $p < .05$

≠ $p < .01$

higher percentage of H (human content) in their responses. Similar results were found for delinquents with respect to M responses (r = .421) but this result slightly missed the significance region of .423. Penetration of boundary scores correlated positively with percentage of whole responses (W), degree of anxiety, and degree of hostility for delinquents. They correlated negatively with F % (form) responses for non-delinquents.

4. Perceptual Characteristics

There were more Reducers among delinquent girls than among non-delinquent girls. The chi-square value of 5.73 approached significance ($\chi^2_{.05} > 5.99$). The results are summarized in Table 9.

Table 9

Perceptual Characteristics in Relation to Delinquency and Non-delinquency*

	Perceptual Type			
	Reducer	Augmenter	Moderate	Total
Delinquent	11 (7.33)	3 (3.42)	7 (10.26)	21
Non-delinquent	4 (7.67)	4 (3.58)	14 (10.74)	22
Total	15	7	21	43

*Numbers in parentheses represent expected frequencies.

Results of this study also showed that among non-delinquents Reducers scored lower on strong color value contrasts (preferring weaker contrasts) than

Moderates or Augmenters ($p < .05$). Augmenters chose strong contrasts more often. See table 10 for mean number of choices for strong contrasts (out of a total of fifteen possible choices).

Table 10

Comparison of Mean Choices of Strong Color Value Contrasts in Clothing Fabrics between Three Perceptual Types of Non delinquents (N = 22)

Perceptual Types	Mean Choices Strong Color Contrasts	F
Reducers	8.0	3.98/
Moderates	10.7	
Augmenters	11.0	

/ $p < .05$

5. Clothing Fabric and Dress Style Preferences

Results of this study have shown several relationships between clothing fabric preferences and physical and personality characteristics of delinquents and non-delinquents. This section summarizes the clothing fabric preferences and dress style preferences per se for delinquent and non-delinquent girls in the study. (See Table 11).

It will be noted that delinquent girls chose tints and large designs significantly more often than non-delinquents. They also chose fewer shades of color fewer strong color value contrasts (therefore chose more weak contrasts) than non-delinquents. Non-delinquents chose more modest

dress styles than delinquents. While differences in preferences for masculine and feminine styles for the two groups were not statistically significant, the non-delinquents tended to choose masculine styles more often than the delinquents. The results approached significance, with an F value of 3.90 (γ .05 = 4.07).

Table 11

Mean Clothing Fabric and Dress Style Preferences

of Delinquents and Non-delinquents

	Delinquent (N = 22)	Non-delinquent (N = 22)	F
Saturated Color	5.36	5.18	.04
Tint	8.77	6.50	11.97≠
Shade	3.86	6.32	8.72≠
Strong Contrasts	8.77	10.27	6.18/
Warm Colors	4.59	5.36	.74
Large Designs	8.27	6.00	5.21/
Rough Textures	10.05	8.00	3.95
Masculine Styles	6.73	8.05	3.91
Modest Styles	8.50	10.09	6.05/

/ $p < .05$

≠ $p < .01$

Tables 12 and 13 summarize the intercorrelations of fabric preference and dress style variables for delinquents and non-delinquents.

Table 12

Intercorrelations of Fabric Preference and

Dress Style Variables for Delinquents (N = 22)

	Tint	Shade	Strong	Warm	Large	Rough	Masc.	Modest
Saturated	-.38	-.74≠	-.002	-.04	-.03	-.04	-.39	-.04
Tint		-.34	-.002	-.22	-.17	-.06	.53+	.40
Shade			-.003	.20	.15	.09	.02	-.25
Strong				-.39	.22	-.31	.04	-.16
Warm					-.44+	.18	-.06	.01
Large						-.20	.25	-.14
Rough							.43+	.45+
Masculine								.56≠

+ $p < .05$

≠ $p < .01$

As indicated in Table 12, delinquent girls preferring tints of color also chose masculine styles more often than girls not preferring tints. Girls preferring warm colors chose smaller fabric designs than girls preferring

cool colors. Girls choosing masculine clothing also tended to choose modest clothing.

Table 13

Intercorrelations of Fabric Preferences and

Dress Style Variables for Non-delinquents (N = 22)

	Tint	Shade	Strong	Warm	Large	Rough	Masc.	Modest
Saturated	-.43+	-.64≠	-.26	.22	-.03	-.19	-.08	-.48+
Tint		-.42	.13	.15	.22	.46+	-.34	.22
Shade			.15	-.35	-.22	-.20	.36	.30
Strong				.04	.36	.06	-.12	.43+
Warm					.22	.07	.21	.06
Large						.12	-.16	.04
Rough							-.33	.05
Masculine								.03

+ $p < .05$

≠ $p < .01$

It appears from Table 13 that non-delinquent girls preferring tints of color chose rough textures significantly more often than girls not preferring tints. Girls choosing strong color value contrasts chose more modest clothing than girls choosing weak contrasts. A significant negative

relationship occurred between preferences for highly saturated colors and preferences for modest dress styles. Non-delinquent girls who chose saturated colors tended to choose fewer dresses of modest style than girls with low preference for saturated colors.

CONCLUSIONS AND IMPLICATIONS

1. Bodily Constitution

The results of this study indicate that adolescent delinquent girls differ from non-delinquent girls with respect to body constitution. The delinquent girls were significantly larger than the non-delinquents in bust measurement and weight/height ratios. While no comparable studies of girls were found in the research literature, the intensive study of juvenile delinquency conducted by the Gluecks yielded similar results for boys, with delinquent boys evidencing superiority in gross bodily size, especially in the shoulders, chest, and upper extremities. Accompanying these physical characteristics, the Gluecks found the delinquents to be more impulsive and aggressive than non-delinquents. Kagan's study (1966) of impulsivity in children pointed to a similar relationship between physique and temperament among young boys. Boys in the third, fourth, or fifth grades who were shorter and broader than their age mates were found more likely to be impulsive. For girls, there was a slight tendency for the taller girls to be impulsive. Recent work by Walker (1962) at the Gesell Clinic also indicates that preschool children with mesomorphic (muscular) body build tend to be more aggressive and active than children with tall-linear builds.

The question may be raised here as to whether clothing may alter the body image and thus influence the resulting behavior. In this

connection, no significant relationships were found in the present study between the body measurements of non-delinquent girls and their fabric preferences. An earlier study of college girls also yielded no significant relationships between physical characteristics and fabric choices (Compton, 1962). On the contrary, several such relationships were found for the delinquent girls. The girls with large weight/height ratios chose warm colors and weaker contrasts in the value of color between the design and background of the fabric more often than did smaller girls. Delinquent girls with larger hips chose significantly more fabrics with small designs than girls with smaller hips. Choices of small designs and warm colors were also related to large bust size.

We have cited several research studies which support our findings of a pattern of delinquency portraying superior physique. A plausible explanation for the relationship found in our study between body size, with its resulting (or related) impulsiveness, activity, and aggressiveness, and delinquent girls' preferences for warm colors in clothing fabrics is also contained in several previous research studies. For example, in a study with college students, Bjerstedt (1959) found that preferences for warm colors represented activity, directness, and need gratification. Students preferring warm colors expressed an attitude of life enjoyment rather than of moral or intellectual selection. The Glueck's study showed delinquents to be more inclined than non-delinquents to the immediate indulgence of their appetites. The conclusions of several studies of mentally ill patients indicate that emotionally elated and physically active patients prefer the warm and brighter colors (red, yellow, orange) and that emotionally depressed and physically inactive patients prefer the cooler colors of green, blue, or

purple. (Stefanescu-Goanga, 1911; Allesch, Von, 1924; Pfister, 1934; Birren, 1950; Goldstein, 1942; Bricks, 1944; Goldberg, 1961). Bullough reported in the British Journal of Psychology (1908) that color preferences are determined in the last analysis by the individual's desire to be stimulated (preference for warmth) or to be soothed (preference for coolness).

The results of our study also showed that delinquents with large weight/height ratios tended to score low on % M (human movement responses). In Rorschach interpretation, the M concept implies three main features (Klopfer et al, 1954): (1) a kinesthetic projection-an enlivening of the blot material by reading into it movement that is not there in fact--which implies an imaginal process; (2) a human concept, which implies an ability to see one's world as peopled and consequently to feel empathy with others; and (3) perception at a highly differentiated and usually well-integrated level. M responses indicate an inner system of conscious values in terms of which the individual tends to control his behavior to guide his satisfactions and to postpone his gratifications. In this sense, M's in reasonable quantity and of good form quality indicate goals in terms of which the individual can deny immediate satisfactions without experiencing too much frustration. Using this rationale, results would appear to indicate that the larger delinquent girl does not empathize well with others and probably has difficulty in postponing immediate gratification of her needs. Her choices of warm colors would also point to this conclusion, in light of the relationships previously reported between warm color preferences and the attitude of life enjoyment and immediate need-gratification.

Our study also showed that delinquent girls with large weight/height

ratios and large busts scored higher on % Σ c than smaller girls. The c reactions include verbalizations of texture characteristics. Their use therefore represents cognizance of and interest in surface characteristics. There is an apparent correspondence between interest in the surface of the blot stimuli and interest in the surface of social interaction. Individuals who emphasize c tend to be preoccupied with or disturbed about the problems of social contact. (Phillips and Smith, 1953). In Rorschach interpretation, c responses relate to the handling of affectional need and to the basic expectation of affection to be received from the outside world. This "contact sensation" evokes in the subject his need for basic emotional security (to be held, to belong). (Klopfer, et al, 1954).

In summary, delinquent girls appear to differ from non-delinquents in physical characteristics (larger weight/height and bust) and these characteristics for delinquents appear to be related to several personality characteristics, as measured by the Rorschach test. These characteristics also appear to be projected in the girls' preferences for warm colors over cool colors in clothing fabrics. Figure 1 is a diagrammatic expression of this delinquency pattern.

2. Rorschach Factors

As a group, delinquent girls in this study differed significantly from non-delinquent girls in responding to a higher percentage of whole inkblots. The mean W % for the delinquents was 42.59 per cent as compared to a mean of 22.77 per cent for the non-delinquents. According to Klopfer (1954), the structure of the inkblots leads to the expectancy that 20 to 30 per cent of the locations will be to the whole blot (W %).

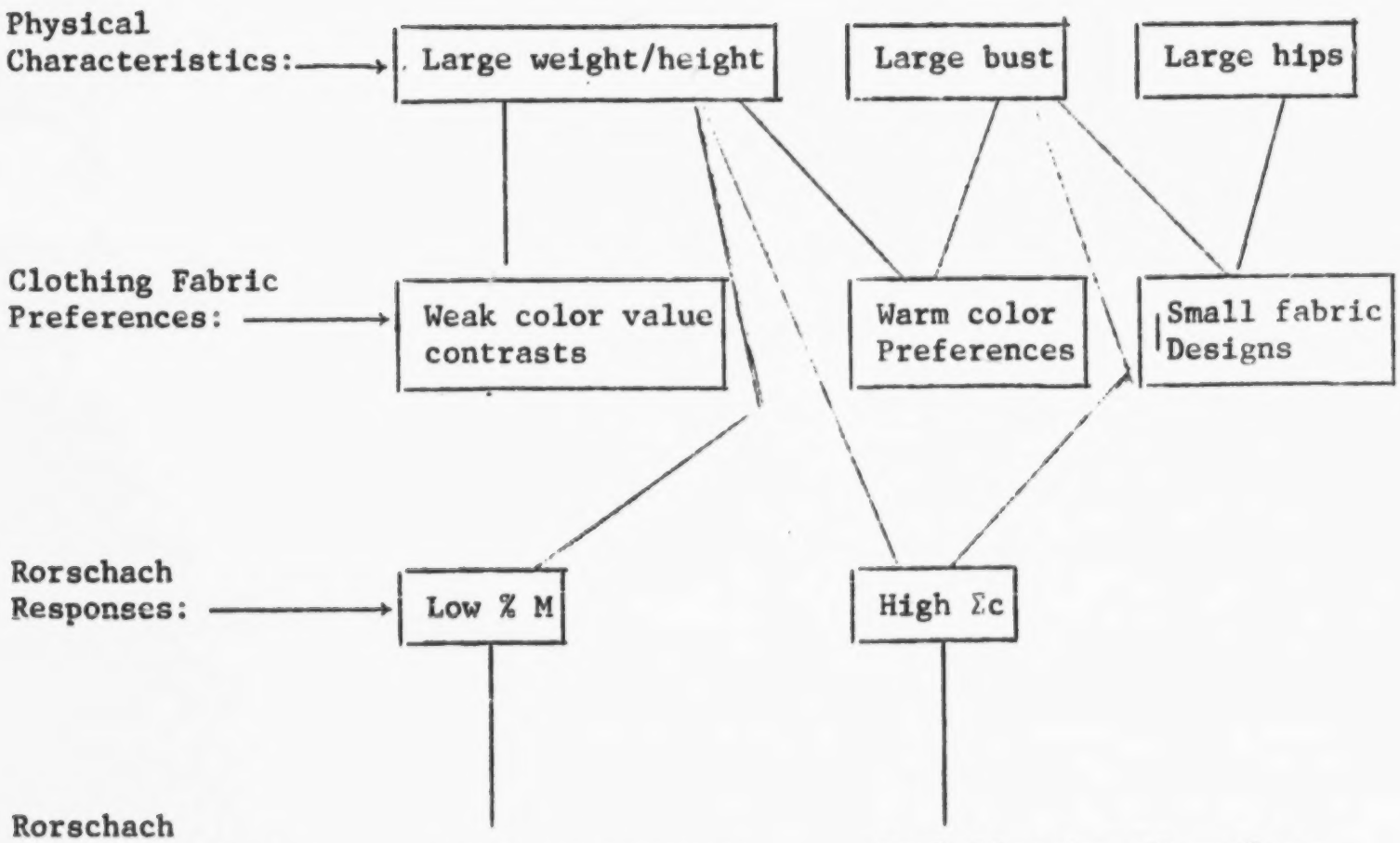

Figure 1

Diagram Illustrating Relationship Between Physique, Clothing Fabric Preferences, and Rorschach Responses of Juvenile Delinquent Girls

Phillips and Smith (1953) report that normative studies on adults of average intelligence report a mean total number of responses which falls in the range of 20 to 30. With an individual's total number of responses within this expectancy range, the anticipated proportion of W responses would range from 15 to 35 per cent. Using these figures as norms, it would appear that our non-delinquent girls fall within the expected range, but our delinquent girls are above the average. According to Phillips and Smith (1953), a W % developed at expectancy occurs more frequently by normals than in persons with psychopathology. It tends to be associated with the ability to deal realistically with day to day problems and implies a practical approach to the environment. These authors also indicate that empirically a W % above expectancy is associated with chronic immaturity and social inadequacy. Among psychotics, a W % beyond expectancy is often related to anxiety. In this connection, it is interesting to note that in the present study, a significant positive correlation was found between W % responses and anxiety scores of the non-delinquent. Such a tendency also existed for delinquents, although this result was not statistically significant.

The delinquent girls also scored significantly higher than non-delinquent girls on the percentage of their ink blot responses having human content (% H). The mean % H for delinquents was 12.44 per cent as compared to a mean of 7.02 per cent for the non-delinquents. According to Phillips and Smith (1953), three to four human responses are considered optimal in a record of average length (20-30 responses). In examining the records in the present study, it appears that the delinquents' percentage of human responses falls within or in several

cases exceeds the expectancy, while the non-delinquents' human responses are below expectancy. Human responses imply interest in and sensitivity to others. However, they do not necessarily imply involvement with others. The subject who developes H may simply be a sensitive observer or critic. To the extent that H exceeds expectancy, the subject is quite likely to be both sensitive to, and hypercritical of, others.

The two groups of girls in this study were also compared for % (H) content. Again, the delinquents scored significantly higher than the non-delinquents. The (H) response category includes variations of the human form that can be subsumed in the class "humanlike." The symbol (H) is used to indicate that the human figure is deprived of reality in some manner. Human figures portrayed as drawings, sculpture, caricatures, or mythological figures such as ghosts and monsters are included. (H) content like H, implies interest in and sensitivity to others. However, it also implies anxiety about interpersonal relations and a tendency toward social isolation. (Phillips and Smith, 1953). For example, Lindner (1947) reports that responses "puppets" and "marionettes" are given to Card III by schizoids who feel themselves motivated by hostile forces beyond their control. The delinquents in our study scored higher on hostility than the non-delinquents, as would be expected.

3. Body-Image Boundary

Several researchers have found differences between delinquent and non-delinquent boys in the direction of the delinquents having poor boundaries. In the present study of delinquent girls, the delinquents were not found to differ significantly from non-delinquents on either barrier (body boundary) scores or penetration of boundary scores.

However, there were significant relationships between these scores and several Rorschach and clothing fabric preference variables. These relationships are summarized in Figure 2.

4. Perceptual Characteristics

Our findings that more delinquent than non-delinquent girls tend subjectively to decrease the size of objects was consistent with the finding of Petrie, McCulloch and Kazdin (1962). These researchers recommended that the educators of "reducer" delinquents should recognize their need for change, movement, and speed, for bright colors, music, and company.

5. Clothing Fabric and Dress Style Preferences

Preferences for clothing fabrics and dress styles differed between delinquent and non-delinquent girls, as illustrated in Figure 3.

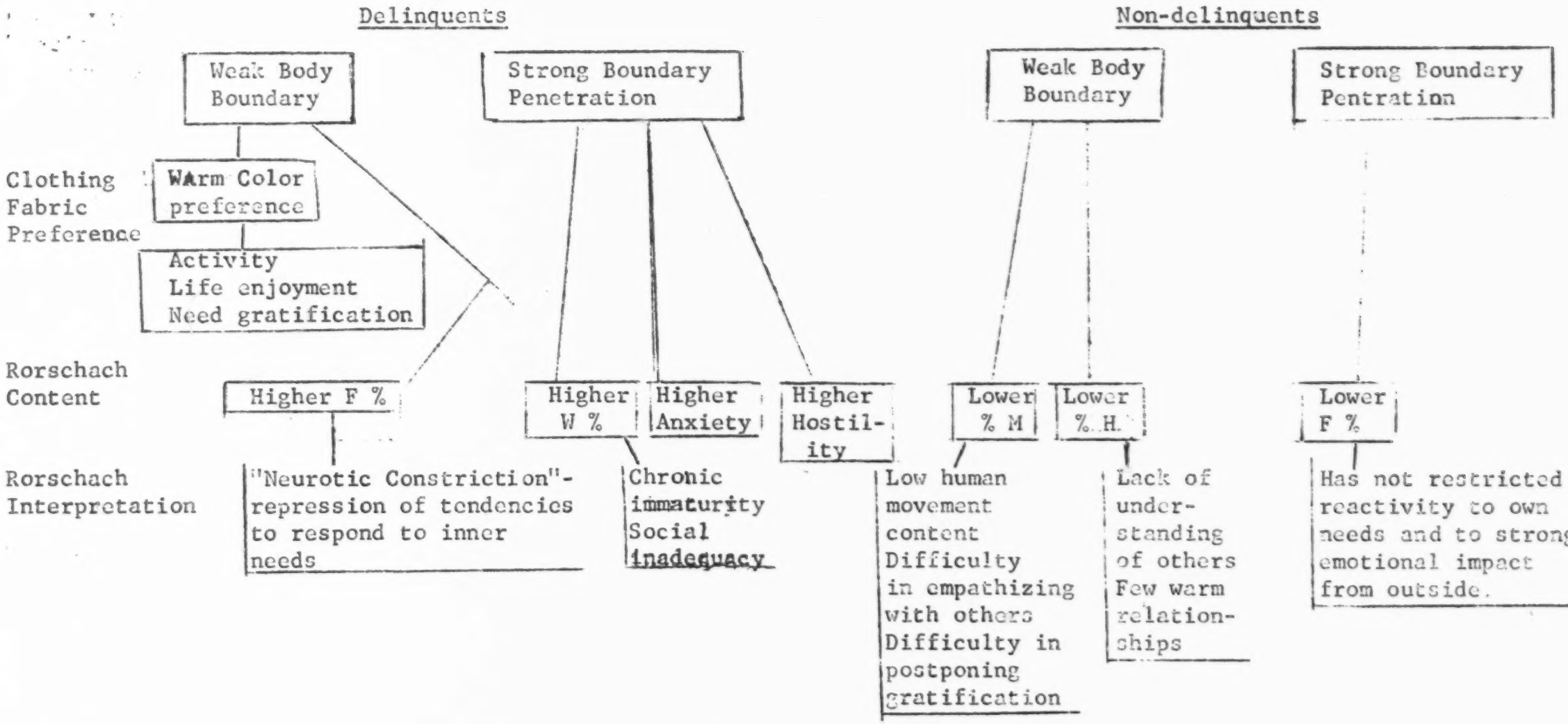

Figure 2.

Diagram Illustrating Relationship Between Body Boundary (Barrier) and Penetration of Boundary Scores, Color Preferences, and Rorschach Determinants for Delinquent and Non-delinquent Girls

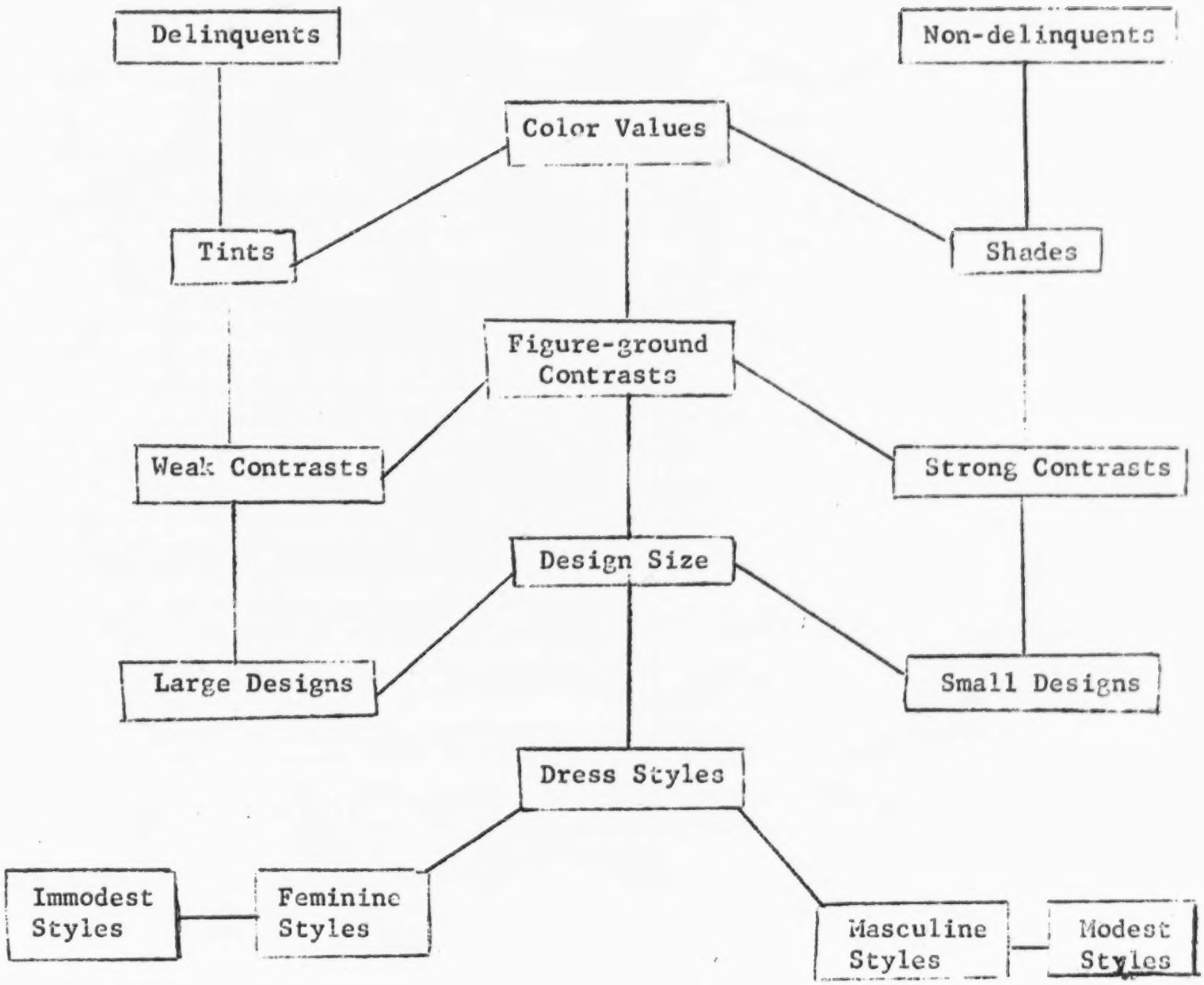

Figure 3.

Diagram Illustrating Significant Differences in Clothing Fabric and Dress Style Preferences Between Delinquent and Non-delinquent Girls

REFERENCES

1. Baugh, V. and Carpenter, B.L., "A Comparison of Delinquents and Non-delinquents." J. of Soc. Psychol. 1962. 56, 73-78.

2. Bayer, L. and Bayley, N., Growth Diagnosis. Univ. of Chicago Press, 1959.

3. Bjerstedt, A., Fargarrangemang ach Fargassociationer, "Nordisk Psykologi, 1959, 11, 96-106.

4. Bunderson, J., Dress and Appearance of High School Girls in Relation to Academic Achievement, School Activity, Peer Acceptance and Disciplinary Problems," Unpublished Master's Thesis, Utah State University, Logan, 1965.

5. Compton, N., "Body-Image Boundaries in Relation to Clothing Fabric Preferences of a Group of Hospitalized Psychotic Women," J. of Home Econ., Jan. 1964, 56, 40-45.

6. Compton, N., "Clothing Fabric Preferences in Relation to Selected Physical and Cultural Background Factors of a Group of Maryland Homemakers," Cooperative Extension Service Home Demonstration News, June 1963.

7. Compton, N., Compton Fabric Preference Test, 1965.

8. Compton, N., Compton Fabric Preference Test Manual, Logan, Utah State University Agricultural Experiment Station, August 1965. (Special Report 19).

9. Compton, N., "Development of a Fabric Preference Test," Perceptual and Motor Skills, 1966, 22, 287-294.

10. Compton, N., "Personal Attributes of Color and Design Preferences in Clothing Fabrics," J. of Psychol. 1962, 54, 191-195.

11. Endacott, J.L., "The Results of Hundred Male Juvenile Delinquents on the Rorschach Ink-blot Test," J. Crim. Psychopath, 1941, 3, 41, 50.

12. Fisher, S. and Cleveland, S., Body Image and Personality. D. Van Nostrand Co., Inc., New York, 1958.

13. Garma, A., "The Origin of Clothes," Psychoanalytical, Quart., 1949, 18, 173-190.

14. Glueck, S. and Glueck, E., Unraveling Juvenile Delinquency. Harvard University Press, Cambridge, Mass., 1950.

15. Harris, R., A Comparative Study of Two Groups of Boys, Delinquent and Non-delinquent, on the Basis of Their Wechsler and Rorschach Test Performance. Halifax: Dalhousie Univer., 1955.

16. Holtzman, W., et al. Inkblot Perception and Personality. Austin: for Hogg Foundation for Mental Health, by University of Texas Press, 1961.

17. Hurlock, E., Adolescent Development. McGraw-Hill Book Co., New York, 1955

18. Kagan, J. "Body Build and Conceptual Impulsivity in Children," J. Personality, 1966, 34, No. 1., 118-128.

19. Klopfer, B., et al. Developments in the Rorschach Technique. New York: Harcourt, Brace and World, Inc., 1954.

20. Leeds, D., "Personality Patterns and Modes of Behavior of Male Adolescent Narcotic Addicts and Their Mothers," Unpublished dissertation, Yeshiva University, 1965.

21. Lindner, R. M., "Analysis of Rorschach Test by Content," J. Clin. Psychopath. 1947, 8, 707-719.

22. Megargee, E. I. "Relation Between Barrier Scores and Aggressive Behavior," J. Abnorm. Psychol., 1965, 1, 307-311.

23. Petrie A., McCulloch R., and Kazdin, P., "The Perceptual Characteristics of Juvenile Delinquents," J. Nerv. and Mental Disease, 1962, 134, 415-421.

24. Phillips, L. and Smith, J. Rorschach Interpretation: Advanced Technique. New York: Grune and Stralton, 1953.

25. Ray, A. B. "Juvenile Delinquency Pattern by Rorschach Ink-blots," Psychologia, 1963, 6(4), 190-192.

26. Ray, A. B. and Majiendar, A. K. "Latent Personality Content of Juvenile Delinquents," J. Psych. Researches, Madris, 1962, 6(1), 4-8.

27. Schilder, P., The Image and Appearance of the Human Body. Kegan Paul, Franck, Trubner & Co., London. 1935.

28. Seltzer, C., "Body Disproportations and Dominant Personality Traits," Psychosomatic Medicine, 1946, VIII, 75-97.

29. Walker, R. N., "Body Build and Behavior in Young Children," Monogr. Soc. Res. Child Development, 1962, 27, No. 84.

APPENDIX A

Scoring for Barrier and Penetration of Boundary

Taken from Fisher and Cleveland,

Body Image and Personality

Barrier Score

There will be presented now a specific breakdown and categorization of the various types of responses that were considered to be indicative of Barrier attributes. It should be emphasized that the categorizations were based on empirical inspection of the arthritics' Rorschachs and sometimes represent speculative elaborations of hints supplied by such inspection. The scoring categories which were designed are as follows:

(1) All separate articles of clothing are scored Barrier. This is true also of all articles of clothing worn by animals and birds. If the clothing is being worn by a person, however, it is scored only if it is unusual in its covering or decorative function. Note these examples of clothing being worn by someone that are scored as Barrier responses:

woman in a high-necked dress
person in a fancy costume
woman in a long nightdress
man with a crown
man in coat with a lace collar
man in a robe
imp with a cap that has a tassel
people with mittens or gloves
people with hoods
feet with fancy red socks or shoes
man with a cook's hat
man with chaps
man with high collar

(2) Animals or creatures whose skins* are distinctive or unusual are scored only if more than the head of the animal is given. The following is a complete list of such animals:

---

* This category of responses was included on the assumption that concern with animals having unusual, valued, specially marked, or specially protective skins represents a focus on some aspect of the substantiality of covering surfaces.

alligator	fox	lynx	prairie dog	skunk
badger	goat	mink	rhinoceros	tiger
beaver	hippo	mole	scorpion	walrus
bobcat	hyena	mountain goat	sea lion	weasel
chameleon	leopard	peacock	seal	wildcat
coyote	lion	penguin	sheep or lamb	wolverine
crocodile	lizard	porcupine	Siamese cat	zebra

Any animal skin (except bear skin on card IV) may be considered Barrier if unusual emphasis is placed on the textured, fuzzy, mottled, or striped character of the surface. Examples:

fuzzy skin
skin with spots
skin with stripes

Included in this general covering category are all shelled creatures except crabs and lobsters. Crabs and lobsters are excluded because of their frequency of occurrence. Lobsters and crabs are scored only in the unusual instances in which the shell alone is seen. Exampies of shelled creatures:

snail
mussel
shrimp
clam
turtle

(3) Score references to enclosed openings in the earth. Examples:

Valley
ravine
mine shaft
well
canal

(4) Score references to unusual animal containers. Examples:

bloated cat
pregnant woman
kangaroo
udder

(5) Score references to overhanging or protective surfaces. Examples:

umbrella
awning
dome
shield

(6) Score references to things that are armored or much dependent on their own containing walls for protection. Examples:

tank
battleship
rocket ship in space
armored car
man in armor

(7) Score references to things being covered, surrounded, or concealed.

Examples:

bowl overgrown by a plant
house surrounded by smoke
log covered by moss
person behind a tree
man covered with a blanket
person hidden by something
someone peeking out from behind a stone
donkey with load covering his back
person caught between two stones

(8) Score references to things with unusual container-like shapes or properties. Examples:

bagpipes
throne
ferris wheel
chair

(9) Do <u>not</u> score masks or buildings. There are, however, a few exceptional instances in which unique structures are scored. The following are the exceptions;

quonset hut
igloo
tent
arch
fort

(10) Do <u>not</u> score instruments which grasp or hold. Examples:

pliers
tongs
tweezers

Additional <u>general</u> examples of Barrier responses:

basket
bay
bell
book
book ends
bottle
bubble
cage
candleholder
cave
cocoon
cove
curtain
dancer with veil
frosting on cake
fuzzy poodle
globe
harbor
headdress
hedge along a walk
helmet
inlet
lake surrounded by land
land surrounded by water
mountain covered with
net
pot
river
screen
spoon
urn
wall
wallpaper
wig

In scoring any given Rorschach record, the total number of responses falling into the above categories is compiled. Each response is given a value of 1. The final score is simply equal to the total number of Barrier responses.

<u>Penetration of Boundary Score</u>

An individual's feeling that his body exterior is of little protective value and could be easily penetrated was considered to be expressed in his Rorschach responses in three different ways:

(1) In terms of images that involve the penetration, disruption, or wearing away of the outer surfaces of things. The following Rorschach responses are illustrations of such images: "bullet penetrating flesh," "shell of a turtle that has been broken open," "squashed bug," "badly worn away animal skin."

(2) In terms of images that emphasize modes or channels for getting into the interior of things or for passing from the interior outward to the exterior. Here are some examples: "vagina," "anus," "open mouth," "an entrance," "doorway "

(3) In terms of images that involve the surfaces of things as being easily permeable or fragile. The following are examples: "soft ball of cotton candy," "fleecy fluffy cloud," "mud that you can step through."

The following is an enumeration of the specific subcategories of Penetration of Boundary response.

(1) Score all references to the mouth being opened or being used for intake or expulsion. Examples:

dog eating
dog yawning
man sticking tonque out
animal drinking
man vomiting
boy spitting
person with mouth open

Do <u>not</u> score references to use of the mouth for singing or talking.

(2) Score all references to evading, bypassing, or penetrating through the exterior of an object and getting to the interior. Examples:

X-ray picture
body as seen through a fluoroscope
cross section of an organ
body cut open
inside of the body
autopsy

(3) Score references to the body wall being broken, fractured, injured and damaged. Examples:

mashed bug	wound
wounded man	man stabbed
person bleeding	man's skin stripped off

Do not score instances in which simple loss of a body member has occurred (e.g., amputation, head cut off" unless there is a description of concomitant bleeding.

Another subvariety of this category includes responses involving some kind of degeneration of surfaces. Examples:

withering skin	withered leaf
diseased skin	deteriorating flesh

(4) Score examples of openings in the earth that have no set boundaries or from which things are being expelled:

bottomless abyss	geyser spurting out of ground
fountain shooting up	oil gusher coming in

(5) Score all openings. Examples:

anus	looking into the throat
birth canal	nostril
doorway	rectum
entrance	vagina

window

(6) Score references to things which are insubstantial and without palpable boundaries. Examples:

cotton candy	shadow
ghost	soft mud

(7) Score all references to transparency. Examples:

can see through the dress
transparent window

Further general examples of Penetration of Boundary responses:

animal chewing on a tree	bat with holes
broken-up butterfly	torn fur coat
jigsaw not put together	frayed wings
doorway	deteriorated wings
fish with meat taken off	grasshopper pecking at something
broken body	harbor entrance

man defecating

In scoring any given Rorschach record, the total number of responses falling into the above categories was compiled. Each response was given a value of 1.

We discovered that there are instances in which a response has both Barrier and Penetration of Boundary characteristics. For example, such responses as "man with broken armor," "bombed battleship," and "broken vase" have simultaneous connotations of unusual protective or containing properties and also disrupted boundaries. These responses are scored both as Barrier and Penetration of Boundary. Although such scoring may appear to be paradoxical, we decided to adhere to it empirically if it followed from our basic scoring scheme.

APPENDIX B

Scoring for Anxiety and Hostility

Taken from Holtzman, et al,

Inkblot Perception and Personality

Anxiety (Ax)

The scoring of content for signs of anxiety is patterned somewhat after the original work of Elizur (1949). A 3-point scale is used, making possible a range of scores from 0 to 90. Since some significant changes have been made in the system proposed by Elizur, detailed instructions for scoring Anxiety are given. Several broad scoring categories have been distinguished, although only the numerical score is recorded.

Emotions and attitudes expressed or implied. Response that reveal feelings or attitudes such as fear, unpleasantness, sorrow, and pity are included here.

Examples:

SCORE I	SCORE 2
an unpleasant animal	a frightening animal
a sad child	a dark and dangerous cave
a gloomy cave	a weeping child
a whimpering dog	a mad dog crazy with fear

Inkblot Perception and Personality

Expressive behavior. Sometimes the fantasies revealed in the projection movement into the percept can be interpreted as signs of anxiety. A score of 2 is given when such an interpretation is fairly clear-cut. A score of 1 is used when the sign of anxiety is somewhat debatable and indirect in meaning.

SCORE I	SCORE 2
rabbit running away	a girl escaping
someone caught in a rain storm	pile of rocks falling on a man
bullfighter facing a bull	two bullfighters with two bulls charging them
a man crawling through underbrush during a storm	man crawling on desert, dying of thirst,
a mouse caught in a trap	two Negroes being hanged

Symbolic responses. The scoring of symbolism for signs of anxiety presents some difficulties. Although it is generally recognized that anxiety is often manifest in symbolic, disquised form, the particular form it takes may vary considerably from one person to the next. The universal meaning of symbols can be seriously questioned, even when restricted to relatively homogeneous subcultures. Consequently, one should be rather conservative in scoring symbolic interpretations for anxiety. A score of 2 reserved only for those responses which have rather clear-cut symbolic meaning. A score of 1 is given when the symbolism is judged present but is of subtle and questionable nature.

SCORE I	SCORE 2
bouquet of dead flowers	a dead person
animal carcass in the desert	the black represents death and destruction
dreary and desolate country-side	bottomless pit
an impression of coldness	confusion and conflict of the world
	diseased lung
	a man losing his mind
	cancerous growth

Cultural stereotypes of fear. As in the case of symbolic responses, treating certain cultural stereotypes as universal signs of anxiety is fraught with difficulties. Undoubtedly some of the concepts listed below as examples of such stereotypes, especially those scored 1, vary considerably from one subculture to the next in the degree of anxiety they signify. Nevertheless, it is important to recognize the fact that some concepts do have a general connotation of fear for many individuals in our culture, even though they may be given without any elaboration. A score of 2 is reserved for those objects or events which have distinctive, fear-producing

properties rather universally. A score of 1 is assigned cultural stereotypes of questionable universality. A score of 0 is given such concepts as campfire, match, candle, fire in fireplace, frogs, bugs, X-ray, bones, rocks, coat of arms, dirty crumpled rag, and sun seen through clouds.

SCORE I	SCORE 2
bat	vampire bat
explosion	snake
idol	spider
altar	witch
witch doctor	human skeleton or skull
war mask	blood
castle at night	atomic explosion
deserted building	erupting volcano
storm clouds	hurricane
fire (destructive)	tornado
temple	scorpion
devils	vulture or buzzard
volcano	graveyard
monster	haunted house
animal skeleton	ghost

HOSTILITY (HS)

After consideration of the existing scales for hostility on the Rorschach, notably those of Elizur (1949) and Murstein (1956), a 4-point scale was developed to be used in scaling content for signs of hostility. The scoring of Hostility is based on symbolic, implicit, or explicit signs of hostility in the response. As with Anxiety, a certain amount of clinical sensitivity on the part of the scorer is probably essential for highly satisfactory results.

The scores given to any of the following examples may be lowered or raised, depending upon the subject's elaboration of his percept. Two general rules may prove helpful. As the hostility moves from vaque or symbolic expressions or actions to more direct, violent ones, the score increases. As the objects involved in the percept move from inanimate objects, to animals, to humans, the probability of a higher score on Hostility increases.

SCORE I

(a) Animals that are predatory or hostile toward man.

alligator
bear
black widow spider
eagle
gorilla
lion
manta ray
python
scorpion
snake
tarantula
tig r
wolf

(b) An implement of destruction or aggression seen in a dormant state.

tank
bull-whip
jet bomber
rocket
cannon
knife
machine gun

(c) Something that is not ordinarily considered a weapon which is capable of piercing, cutting, crushing, or hammering.

barbed wire
hammer
ice tongs
pliers
scissors
a stake hammered into the ground
vise
wire cutter

(d) Parts of the anatomy seen in isolation which are capable of wreaking harm but not actually seen as doing so. When used only as incidental elaboration of an animal or human response, a score of 0 should be given.

claws
horns
pincers
sharp nails
talons
teeth

(e) People or animals eating food. (Score 0 for people or animals drinking.)

(f) Human or animal figures leering. The presence of an eye or eyes peering or watching. (Do not score "eyes" when no elaboration such as staring or watching is given.)

two eyes staring out of the darkness
a leering face
a person watching me

(g) A person pointing or a finger pointing.

(h) A human or animal described as fierce, aggressive, dangerous, or evil. (Score 2 or 3 for animals actually engaged in such action.)

crouched lion
an evil-looking witch
a fierce-looking man
a ferocious cat
a mean-looking dog

(i) Natural phenomena of a destructive nature. (Score 2 if such phenomena are seen in the act of destroying some object or structure.)

erupting volcano
forest fire
hurricane
sandstorm
tornado
windstorm

(j) Bisected or dissected animal, human, or organ. The implication is that the action has occurred in the past and is somewhat impersonal. (If the animal is said to have been injured, or there is implication of injury as a result of aggressive action, score 2.)

a dissected frog
cut spinal cord
butterfly pinned, like in a collection
an animal bisected, laid open
biological preparation of a pig

(k) Explosions or fire without excessive accompanying description or elaboration. (Score 0 for such domestic fires as: fire in fire-place, candle flame, or cooking fire.)

an explosion
anti-aircraft flak
house on fire

(l) People or animals seen in derogatory positions or shapes.

ape-like man
gossiping women
beggers
deformed dog
man with a pointed head
old hag

(m) Human <u>symbol</u> being injured.

broken doll
statue of a man with head broken off
slashed portrait

(n) An infavorable human characteristic. (Score 0 for fatness, skinniness, or baldness, unless implication is derogatory.)

angry people
mean old man
frowning people
stupid-looking man
vicious man
crazy lady

(o) Any injury to an insect, including death. (Score 0 if there is implication that insect has been dead for some time and is decayed.)

squashed insect or bug
mangled butterfly

(p) Dead person where there is no implication of violent death.

SCORE 2

(a) Animals or humans seen in aggressive struggle, verbal or physical.

men arguing
ladies quarreling
bears wrestling or boxing
women hitting one another with brooms
men chasing someone
lion stalking a deer
snakes fighting over prey
a man stabbing another with a pitchfork
a man shooting someone
men dueling
crabs fighting

(b) Abstract expressions of direct conflict or aggression.

the red reminds me of war
this symbolized conflict
a feeling of hate and hostility

(c) Blood, without accompanning conflict or violent action between animals or humans.

red reminds me of blood
this looks like a bloody dissection
there is blood dripping

(d) A dead or wounded person or animal (not insect) seen as shot, mangled, blood flowing, gashed, etc.

(e) Violence depicted without showing a personal causal element.

woman with head cut off
man severed in two

SCORE 3

This category is reserved for direct hostility among humans or animals seen in violent destructive action toward each other with elaboration of gore, injuries, blood, death occurring, etc.

Appendix C

COMPLETED RECORD OF AN AUGMENTER (INCLUDING COMPUTATIONS)

Small Block Stimulation

Series of Measurements						Totals	Averages	Difference From Baseline Average
I (Baseline)	(10-7/8 | 11-7/8)	10-7/8	10-7/8	11-2/8	11-1/8	44.125	11.03	
II (After 90-sec. stimulation)			13-3/8	13-4/8	12-3/8	12-3/8	51.625	12.91	+1.88
III (After 180-sec. stimulation)			13-6/8	13-3/8	13-2/8	13	53.375	13.34	+2.31
IV (After 300-sec. stimulation)			14-6/8	12-6/8	13-6/8	14-1/8	55.375	13.84	+2.81 / 7.00
----------R E S T P E R I O D----------									
IV (After 15-min. rest period)			14-3/8	14-6/8	14-3/8	15	58.5	14.63	+3.60

$\frac{\quad}{X} = \frac{7}{3} = +2.33$ (Final average)